



Heat-related emergency hospitalizations for respiratory diseases in the Medicare population

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Abstract:

RATIONALE: The heat-related risk of hospitalization for respiratory diseases among the elderly has not been quantified in the United States on a national scale. With climate change predictions of more frequent and more intense heat waves, it is of paramount importance to quantify the health risks related to heat, especially for the most vulnerable. **OBJECTIVES:** To estimate the risk of hospitalization for respiratory diseases associated with outdoor heat in the U.S. elderly. **METHODS:** An observational study of approximately 12.5 million Medicare beneficiaries in 213 United States counties, January 1, 1999 to December 31, 2008. We estimate a national average relative risk of hospitalization for each 10 degrees F (5.6 degrees C) increase in daily outdoor temperature using Bayesian hierarchical models. **MEASUREMENTS and MAIN RESULTS:** We obtained daily county-level rates of Medicare emergency respiratory hospitalizations (International Classification of Diseases, Ninth Revision, 464-466, 480-487, 490-492) in 213 U.S. counties from 1999 through 2008. Overall, each 10 degrees F increase in daily temperature was associated with a 4.3% increase in same-day emergency hospitalizations for respiratory diseases (95% posterior interval, 3.8, 4.8%). Counties' relative risks were significantly higher in counties with cooler average summer temperatures. **CONCLUSIONS:** We found strong evidence of an association between outdoor heat and respiratory hospitalizations in the largest population of elderly studied to date. Given projections of increasing temperatures from climate change and the increasing global prevalence of chronic pulmonary disease, the relationship between heat and respiratory morbidity is a growing concern.

Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3734617>

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Air Pollution, Temperature

Air Pollution: Interaction with Temperature, Ozone, Particulate Matter

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Climate Change and Human Health Literature Portal

Geographic Location:

resource focuses on specific location

United States

Health Impact:

specification of health effect or disease related to climate change exposure

Respiratory Effect

Respiratory Effect: Chronic Obstructive Pulmonary Disease, Other Respiratory Effect

Respiratory Condition (other) : respiratory tract infection

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified